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10/584,002

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Mark Derek Cregan

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EXAMINER

SAJJADI, FERAYDOUN GHOTB

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/584,002

**Applicant(s)**

CREGAN ET AL.

**Examiner**

FEREYDOUN G. SAJJADI

**Art Unit**

1633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19, 21, 22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 19, 21, 22 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/22/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is in response to papers filed August 26, 2008 and the claim amendment dated December 1, 2008. Applicant's response to the restriction requirement of April 28, 2008 has been entered. Claims 4-6, 8 and 12 have been amended. No claims were cancelled, or newly added. Currently, claims 1-19, 21, 22 and 24 are pending in the application.

#### ***Election/Restrictions***

Applicants' election of Group I (claims 1-18), drawn to a method for isolating progenitor cells having stem-cell-like characteristics from human mammary secretions, is acknowledged. The election was made with traverse. Applicants' species election of female, mature milk, lactating period and DNase, also with traverse, is further acknowledged.

Applicants' traversal of the Group restriction is on the grounds that International Search Authority did not raise any objection based on non-unity and that the examiner has not applied the proper standard in concluding that there is no inventive concept, because the disclosure of Young et al. has been incorrectly interpreted.

Applicants' arguments have been fully considered, but are not found persuasive, because the fact that restriction was not required in the PCT application by a different examiner, does not preclude or negate the requirement in the U.S. National Stage. As stated in MPEP 1502.01, restriction between plural, distinct inventions is discretionary on the part of the examiner in utility patent applications. The restriction under PCT rules 13.1 and 13.2 was proper, and Applicants have stated on the record that they agree with the examiner that the common technical features shared by Groups I and II is a stem-cell-like progenitor cell isolated from mammary secretions.

Applicants argue that the publication by Young et al., which does not concern a human being's mammary secretion, but the milk of a Tammar Wallaby, does not disclose the isolation of stem cells or precursor cells in milk; that the cells found in the samples are not pluri- or multipotent, and that the publication contains contradictory statements. Such is not found persuasive, because Applicants argue limitations that are beyond the special technical feature indicated. Applicants have agreed that the common technical feature is a stem-cell-like

progenitor cell isolated from mammary secretions. Young et al. describe the isolation of vacuolated mononuclear cells from milk, that resembled blast cells and may be primitive stem cells or epithelial in origin. The cells observed by Young et al. are therefore stem-cell-like. It should be noted that the reference of Young et al. has been applied to the extent that it reads on stem-cell-like cells isolated from mammary secretions (i.e. to satisfy the special technical feature), and not limitations that include human and pluripotency.

Applicants traverse the species restriction, arguing that male secretions may be an interesting source of progenitor cells, and removal of beads from the cells can be conducted using various digestion enzymes, and there is no burden to search Groups I and II together. Such is not found persuasive, because Applicants' arguments are irrelevant to the basis of the species restriction. As previously indicated, the species are each structurally distinct, capable of separate utility, and have non-commonly shared particulars and thus do not share a substantially common structural feature. Further, the issue of burden is not pertinent to restriction under PCT rules, as the claims have not been restricted under U.S. restriction practice.

The election requirement is deemed proper and is therefore made **FINAL**. Claims 19, 21, 22 and 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Elected claims have been examined commensurate in scope with the elected invention, and the elected species of the invention. Please note that after a final requirement for restriction, the Applicants, in addition to making any response due on the remainder of the action, may petition the Commissioner to review the requirement. Petition may be deferred until after final action on or allowance of claims to the invention elected, but must be filed not later than appeal. A petition will not be considered if reconsideration of the requirement was not requested. (See § 1.181.).

Elected claims 1-18 are under current examination.

### ***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on June 26, 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner, and indicated as such on Applicants' IDS form.

***Claim Objection***

Claim 16(iii) is objected to for failing to comply with 37CFR § 1.121 (c), because the word "of" in the first line was previously deleted in the preliminary amendment dated July 12, 2007 and has been presented in the claim by line-through. The deleted text should be omitted from the claim.

***Claim Rejection - 35 USC § 112- New Matter***

The following is a quotation of the first paragraph of 35 U.S.C. §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13 and 16 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art (hereafter the Artisan), that the inventor(s), at the time the application was filed, had possession of the claimed invention. 37 CFR §1.118 (a) states that "No amendment shall introduce new matter into the disclosure of an application after the filing date of the application".

Dependent claim 13(vi) was amended on July 12, 2007 to recite: this suspension is incubated for at least 15 minutes at 4° C. Claim 16(iii) was amended on July 12, 2007 to recite: incubated for no less than 10 and no more than 30 days. Applicants have not indicated where support for the aforementioned limitations may be found. Neither the instant specification nor the claims as originally filed contain such limitations. The specification discloses the limitations of 15 minutes at 4° C, 10-30 days and 14-20 days.

Thus, at the time the application was filed, an Artisan of skill would not recognize from the disclosure that Applicant was in possession of the incubation period greater than 15 minutes, or , no less than 10 and no more than 30 days, as instantly claimed.

MPEP 2163.06 notes: "If new matter is added to the claims, the examiner should reject the claims under 35 U.S.C. 112, first paragraph - written description requirement. *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an

invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application. MPEP 2163.06 further notes "When an amendment is filed in reply to an objection or rejection based on 35 U.S.C. 112, first paragraph, a study of the entire application is often necessary to determine whether or not "new matter" is involved. Applicant should therefore specifically point out the support for any amendments made to the disclosure". This is a new matter rejection.

***Claim Rejections - 35 USC § 112- Second Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 8, 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 1 is directed to a method for isolating progenitor cells having stem-cell-like characteristics from female human mature milk during a lactating period, without setting forth any specific method steps. The omitted steps are: subjecting the milk to centrifugation, suspending the cell pellet in medium and immuno-isolating the stem cells with magnetic beads. Claims 2-6 and 11 depend from claim 1 and fail to recite any method steps, and thus have been included in the rejection.

Claim 8 is unclear. The claim recites the method of claim 1, wherein in a first step cellular components are washed out of the mammary secretion, but in a second step are stained with antibodies. Thus, it is unclear, how cells that have been washed out may be stained.

Amending the claim to indicate that the cellular components are retained and washed, would obviate the rejection.

Claim 13 is unclear. The claim depends from claim 12. Claim 12 is directed to a method comprising step (iv), where in a fourth step the progenitor cells are separated from the cell pellet. Claim 13 recites as a first step, step (v), wherein the cell pellet is suspended in culture media and the subsequent steps are directed to isolating progenitor cells that were already isolated in step (iv) of claim 12.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Stingl et al. (Breast Cancer Res. Treat. 67:93-109; 2001).

The claim is directed to pluripotent or multipotent progenitor cells, derived using a method according to claim 1. As such, the claim is a product by process claim. MPEP 2113 further states: "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Stingl et al. teach the characterization of three types of human breast primitive epithelial progenitor cells by a combination of flow cytometry and *in vitro* colony assay procedures, that included bipotent progenitor cells (Title and Abstract). The examiner further maintains that the office does not have the facilities for examining and comparing applicant's product with the product of the prior art in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of

factual evidence to the contrary, the burden is upon the applicant to prove that the claimed products are functionally different than those taught by the prior art and to establish patentable differences. See *Ex parte Phillips*, 28 USPQ 1302, 1303 (BPAI 1993), *In re Best*, 562, F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ2d 1922, 1923 (BPAI 1989).

Therefore by teaching all the limitations of the claim, Stingl et al. anticipate the instant invention as claimed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (Aus. J. Zool. 45:423-433; 1997), in view of Stingl et al. (Breast Cancer Res. Treat. 67:93-109; 2001).

The claims embrace a method for isolating progenitor cells having stem-cell-like characteristics from female human mature milk during early lactation period.

Young et al. describe the identification of cellular components of colostrum and milk of the tammar wallaby, that included macrophages, neutrophils, lymphocytes and other vacuolated mononuclear cells (Title an Abstract). Young et al. further describe mononuclear cells from all stages of lactation, consistent with studies of human milk (p. 431, under discussion), and state that these cells closely resembled blast cells and may be primitive stem cells or epithelial in origin (second paragraph, p. 425). Sample collection of early milk is described on p. 424, second

paragraph (limitation of claim 6).

While Young et al. do not specifically describe the primitive stem cells that may be epithelial in origin, as isolated from a human female, such was known in the prior art.

Stingl et al. describe the isolation and characterization of three types of human breast primitive epithelial progenitor cells by a combination of flow cytometry and *in vitro* colony assay procedures, that included bipotent progenitor cells (Title and Abstract; limitation of multipotent in claim 2).

The teachings of Young et al. and Stingl et al. are directed to the characterization of primitive stem or progenitor cells. Therefore, it would have been *prima facie* obvious for a person of ordinary skill in the art, to combine their respective teachings and to isolate the human mammary progenitor cells of Stingl et al. from human milk, as instantly claimed, with a reasonable expectation of success, at the time of the instant invention. A person of ordinary skill in the art would have been motivated to isolate and characterize the human mammary epithelial progenitor cells of Stingl et al. from human milk, because Young et al. specifically noted the presence for primitive epithelial stem cells in milk.

Claims 1, 3-5, 8, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (Aus. J. Zool. 45:423-433; 1997), in view of Stingl et al. (Breast Cancer Res. Treat. 67:93-109; 2001), as applied to claims 1, 2 and 6 above, and further in view of Buehring, G. (J. Dairy Sci. 73:956-963; 1990).

The claims embrace a method for isolating progenitor cells having stem-cell-like characteristics from female human mature milk by centrifuging the milk, discarding the supernatant, separating the progenitor cells and culturing the cells in growth medium.

Young et al. describe the identification of cellular components of colostrum and milk of the tamar wallaby, that included cells that may be primitive stem cells or epithelial in origin (second paragraph, p. 425). Stingl et al. describe the isolation and characterization of three types of human breast primitive epithelial progenitor cells by a combination of flow cytometry and *in vitro* colony assay procedures, that included bipotent progenitor cells (Title and Abstract).

While Young et al. and Stingl et al. do not describe the isolation of the stem cells by centrifuging the milk, such was known in the prior art.

Buehring et al. describe the culture of mammary epithelial cells from milk, by pelleting the cells from milk by centrifugation, decanting the supernatant and resuspending the cell pellets in buffer, recentrifuging, repelleting and rinsing the pellet, followed by culture in culture medium containing antibiotics and antifungal fungizone (second column p. 956, first column, p. 957; bridging; limitation of claims 3, 4). Cytochemistry, including antibody binding and staining are further described in the second column, p. 957.

It should be noted that the limitation of staining with antibodies in claim 8 has been interpreted as labeling of cells with antibodies for separation, as in FACS analysis, taught by Stingl et al. (first column, p. 95). The repeated centrifugation, pelleting and washing of the cells described by Buehring must necessarily remove the fat fraction and supernatant in the milk (limitation of claims 12(i-iii) and 16(i)). Limitations that include repelleting for 3 or 4 times and culturing for several days 10-30 days are considered routine and standard procedures in the art of cell isolation and culture. Applicants should further note that as indicated in MPEP 2144.05: Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Routine optimization is not inventive, and no evidence has been presented here to suggest that the number of pellet washing, or days in cell culture was other than routine.

Stingl et al. specifically describe the culture conditions permissive for the stem cells, that include collagen gel culture, equivalent to a reconstituted basement membrane preparation (limitation of claims 15 and 16(v)).

The teachings of Young et al. Stingl et al. and Buehring are directed to the characterization or isolation of mammary cells. Therefore, it would have been *prima facie* obvious for a person of ordinary skill in the art, to combine their respective teachings and to isolate the human mammary progenitor cells of Stingl et al. from human milk, by centrifuging the milk and discarding the supernatant, as instantly claimed, with a reasonable expectation of

success, at the time of the instant invention. A person of ordinary skill in the art would have been motivated to isolate and characterize the human mammary epithelial progenitor cells of Stingl et al. from human milk by centrifuging the milk, because Buehring et al. specifically describe the isolation of cells from whole milk by centrifugation and pelleting.

Claims 1, 7, 9, 10, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (Aus. J. Zool. 45:423-433; 1997), in view of Stingl et al. (Breast Cancer Res. Treat. 67:93-109; 2001), and Buehring, G. (J. Dairy Sci. 73:956-963; 1990), as applied to claims 1, 3-5, 8, 12, 15 and 16 above, and further in view of Nghiem et al. (Methods 28:25-33; 2002).

The claims embrace a method for isolating progenitor cells having stem-cell-like characteristics from female human mature milk by centrifuging the milk, discarding the supernatant, separating the progenitor cells using magnetic beads and culturing the progenitor cells in growth medium.

Young et al. describe the identification of cellular components of colostrum and milk of the tammar wallaby, that included cells that may be primitive stem cells or epithelial in origin (second paragraph, p. 425). Stingl et al. describe the isolation and characterization of three types of human breast primitive epithelial progenitor cells by a combination of flow cytometry and *in vitro* colony assay procedures, that included bipotent progenitor cells (Title and Abstract). Buehring et al. describe the culture of mammary epithelial cells from milk, by pelleting the cells from milk by centrifugation (second column p. 956, first column, p. 957, bridging).

While Stingl et al. describe the isolation of their stem cells by FACS analysis, alternate separation methods using Dynal™ magnetic bead were known in the prior art. For example, Nghiem et al. describe enrichment of a population of cells to isolate a cell population of interest by using antibody-coated magnetic beads, wherein the antibody is attached to the beads by a nucleic acid linker, and the cells are attached to the beads at 4° C for 30 minutes, and removed by passing the cells over a strong magnet, while the unbound cells are passed through. The bound cells liberated from the magnetic beads by treatment with DNase (second column, p. 31).

As the teachings of Nghiem et al. are relevant to the enrichment and isolation of any cells of interest, it would have been *prima facie* obvious for a person of ordinary skill in the art, to

apply their teachings and to isolate the human mammary progenitor cells of Stingl et al., as instantly claimed, with a reasonable expectation of success, at the time of the instant invention. A person of ordinary skill in the art would have been motivated to isolate and characterize the human mammary epithelial progenitor cells of Stingl et al. using magnetic beads, because such was expressly taught by Nghiem et al.

Claims 1, 11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (Aus. J. Zool. 45:423-433; 1997), in view of Stingl et al. (Breast Cancer Res. Treat. 67:93-109; 2001), and Buehring, G. (J. Dairy Sci. 73:956-963; 1990), as applied to claims 1, 3-5, 8, 12, 15 and 16 above, and further in view of Goldman et al. (U.S. Patent Application Publication No.: 2004/0029269; effective filing date May 7, 2002).

The claims embrace a method for isolating progenitor cells having stem-cell-like characteristics from female human mature milk by centrifuging the milk, discarding the supernatant, harvesting and culturing the progenitor cells without using a fibroblast feeder layer, on solubilized basement membrane preparation extracted from EHS mouse sarcoma. The instant specification defines the aforementioned basement membrane as Matrigel™ (p. 14 and original claim 17).

Young et al. describe the identification of cellular components of colostrum and milk of the tamar wallaby, that included cells that may be primitive stem cells or epithelial in origin (second paragraph, p. 425). Stingl et al. describe the isolation and characterization of three types of human breast primitive epithelial progenitor cells by a combination of flow cytometry and *in vitro* colony assay procedures, that included bipotent progenitor cells (Title and Abstract). Buehring et al. describe the culture of mammary epithelial cells from milk, by pelleting the cells from milk by centrifugation (second column p. 956, first column, p. 957, bridging).

While Stingl et al. describe the culture of their isolate stem cells on collagen gel culture on human mammary fibroblast feeder layers (second column, p. 96), feeder free culture of stem cells was known in the prior art. For example, Goldman et al. describe maintenance and feeder-free culture of human ES cells in Example 2 (paragraph [0064], where prior to FACS sorting, the cells are detached from Matrigel-coated plates (Example 4, paragraph [0070])).

As the teachings of Goldman et al. are relevant to the maintenance and culture of human stem cells prior to FACS analysis, it would have been *prima facie* obvious for a person of ordinary skill in the art, to apply their teachings and to culture the human mammary progenitor cells of Stingl et al. on Matrigel™, prior to FACS analysis, as instantly claimed, with a reasonable expectation of success, at the time of the instant invention. A person of ordinary skill in the art would have been motivated to maintain and culture the human mammary epithelial progenitor cells of Stingl et al. using feeder-free culture on Matrigel™, because such stem cell culture was expressly taught by Goldman et al.

### ***Conclusion***

#### **Claims 1-18 are not allowed.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FEREYDOUN G. SAJJADI whose telephone number is (571)272-3311. The examiner can normally be reached on 6:30 AM-3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

